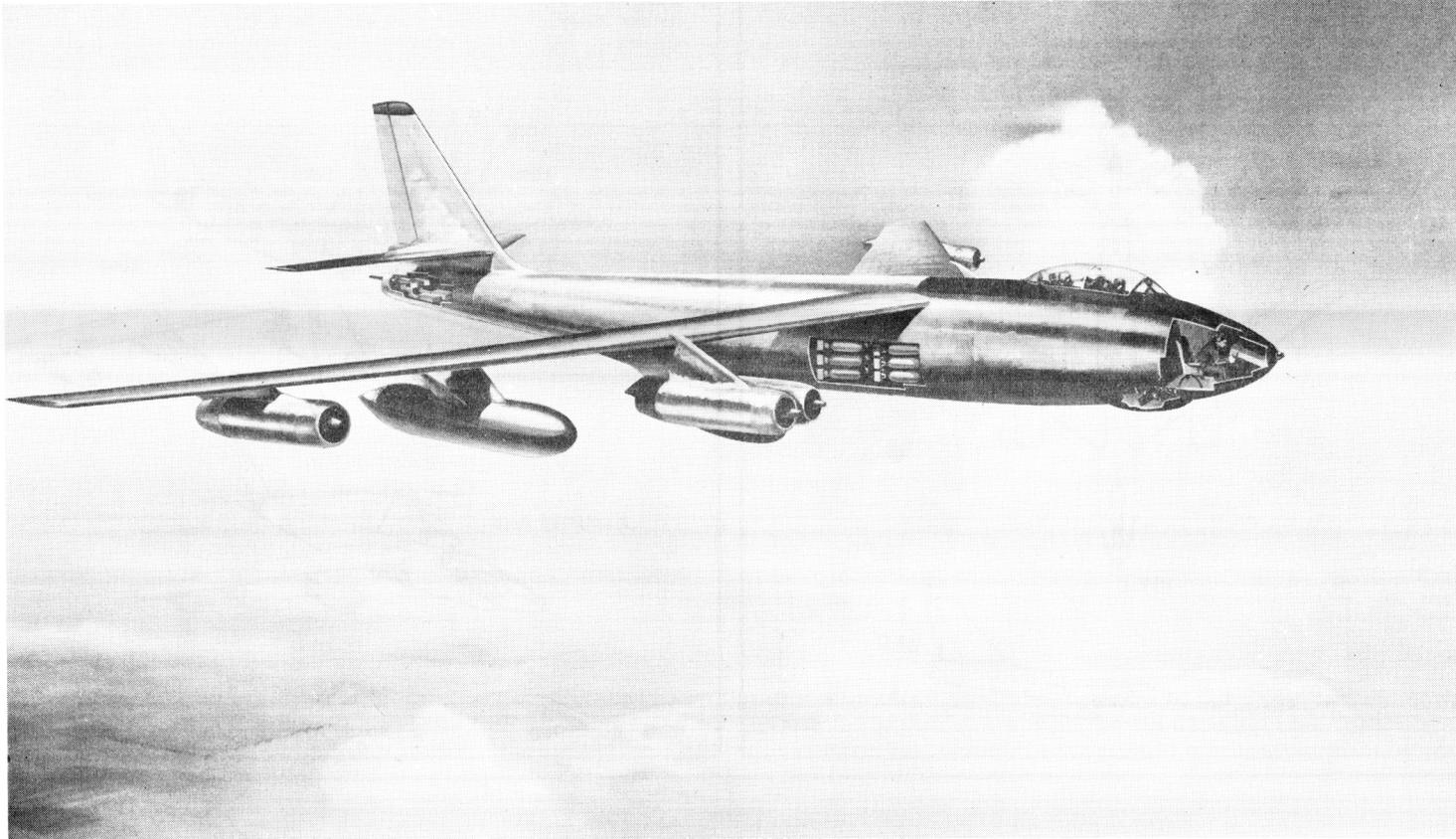


A-1
B-47E / CHAR

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SERVICE

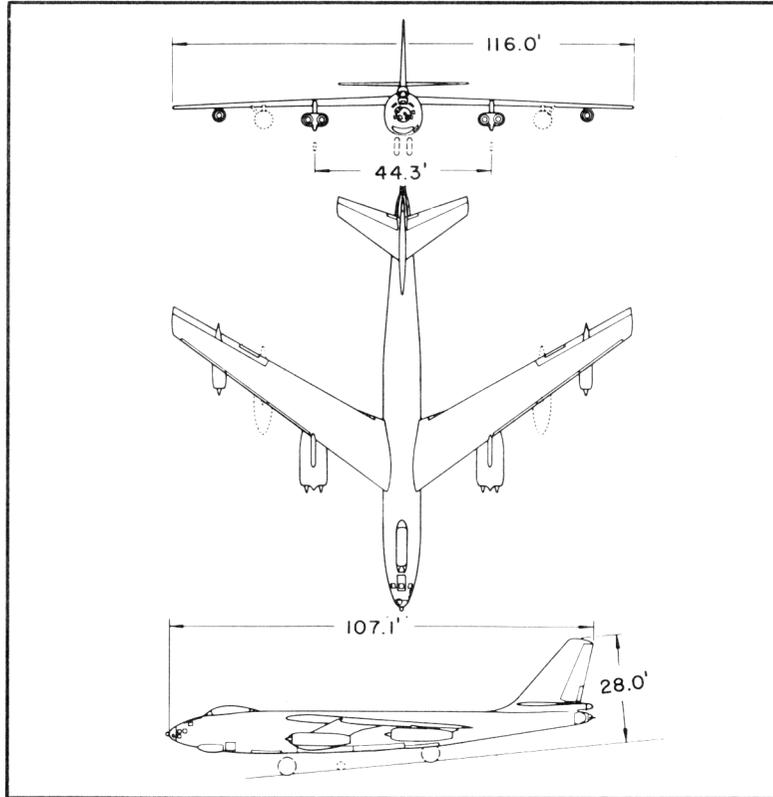


Standard Aircraft Characteristics

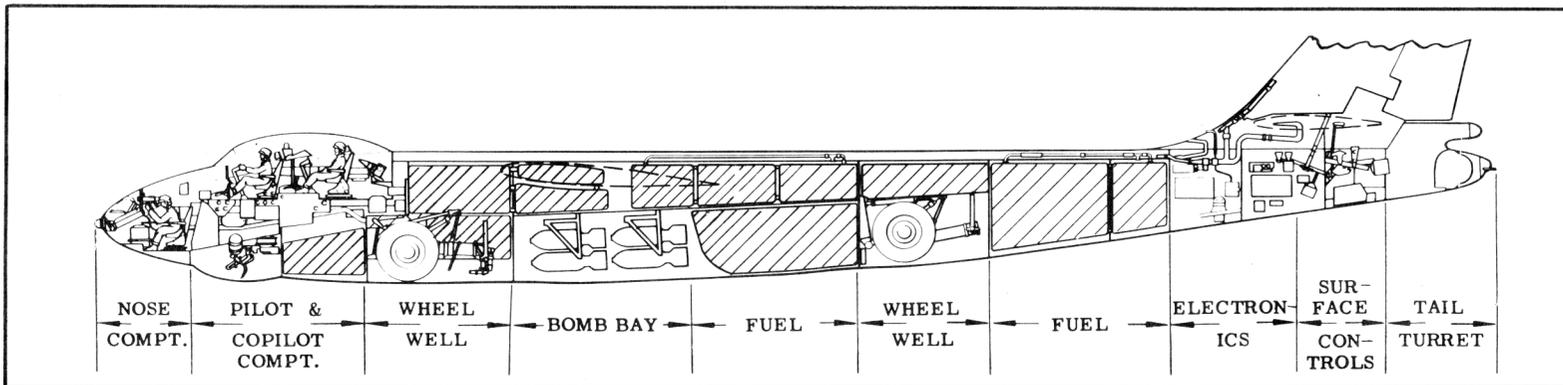
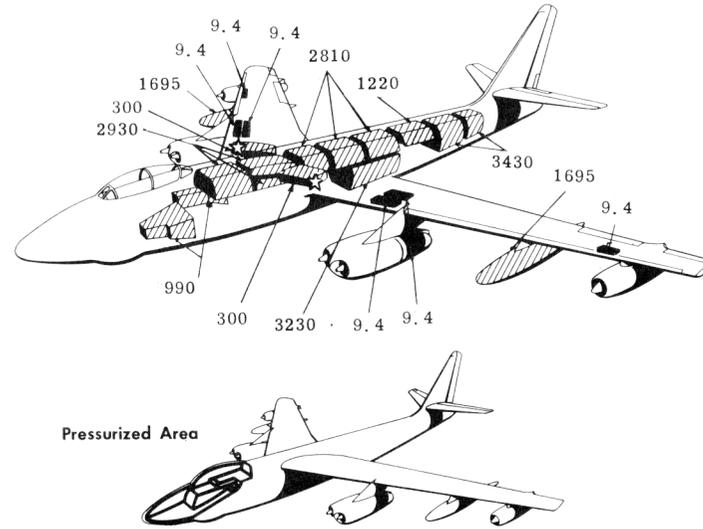
BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

B-47E II
STRATOJET
Boeing

SIX J47-GE-25,25A
GENERAL ELECTRIC



Wing Area 1428 sq ft Wing Section Boeing 145
 Aspect Ratio 9.43 M. A. C. 156"



B-47E II

POWER PLANT

Nr & Model . . . (6)J47-GE-25, 25A
 Mfr . . . General Electric
 Engine Spec Nr . . . E-597A
 Type . . . Axial Flow
 Length . . . 144"
 Diameter . . . 39.3"
 Weight (dry) . . . 2707 lb
 Tail Pipe . . . Fixed Area
 Augmentation . . . Water/Alcohol
 ATO
 Nr & Model (M-15) . . . *(30)16NS1000
 Mfr . . . Phillips Petroleum
 Weight (loaded) . . . 183.4 lb ea
 or
 Nr & Model . . . (19)15KS1000
 Mfr . . . Aerojet
 Weight (loaded) . . . 142 lb ea
 *See note (d) page 6

ENGINE RATINGS

S, L, Static LB - RPM - MIN
 Max: *7200 - 7950 - 5
 5970 - 7950 - 5
 Mil: 5670 - 7800 - 30
 Nor: 5320 - 7630 - Cont
 *wet
 water flow of 650 lb/min
 ATO
 Thrust (lb) . . . 30,000
 Duration (sec) . . . 16
 or
 Thrust (lb) . . . 19,000
 Duration (sec) . . . 15

DIMENSIONS

Wing
 Span . . . 116.0'
 Incidence . . . 2°45'
 Dihedral . . . 0°
 Sweepback (LE) . . . 36°37'
 Length . . . 107.1'
 Height . . . 28.0'
 Tread (outrigger) . . . 44.3'

Mission and Description

Navy Equivalent: None Mfr's Model: 450-157-35

The principal mission of the B-47E-II is the destruction by bombs of land or naval materiel objectives.

The normal crew consists of pilot, co-pilot and observer. The observer's duties are navigation, bombing and operating of radar equipment. Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, pressurization, NESA glass de-icing for the pilot's windshield, de-frosting of windshield, nose window and other transparent sections by recirculated cabin air, thermal anti-icing for wings and empennage and hydraulic boost on all control surfaces. Crew ejection seats are provided for in-flight escape. The pilot and co-pilot are ejected upward and the observer downward.

The water/alcohol injection system utilizes a total tank capacity of 600 gallons which is divided into six individual bladder-type tanks, three each located in the inboard sections of the right and left wings. Solid propellant rockets are installed externally for assist take-off with a droppable rack.

A two-gun turret incorporating a radar computer at the co-pilot's station is installed. A rotatable seat allows the co-pilot to face aft while functioning as the A-5 Fire Control System operator.

Other features are single-point and air refueling, an approach chute to increase drag, drag chute for decreasing landing roll distance and an anti-skid braking device.

Development

Performance and Characteristics shown for the B-47E-II is representative of the Basic B-47E airplane.

Engine change and landing gear modifications that have been made to B-47B-II aircraft closes the gap in the aircraft capability differential between the B-47B-I and the B-47E-II.

WEIGHTS

Loading	Lb	L. F.
Empty	80,756(E)	
Basic	82,726(E)	
Design	125,000	3.0
Combat	*124,875	
Max T.O	†200,000	2.0
Max In-Flight	‡221,000	2.0
Max Land	†180,000	

(E) Estimated
 * For Basic Mission
 † Limited by strength
 ‡ With external tanks

FUELS

Location	Nr. Tanks	Gal
Fwd, Main*	1	2930
Fwd, Aux	1	990
Center Main*	1	2810
Bomb Bay	1	3230
Aft Main*	1	3430
Wing, Drop	2	3390
Aft Tank	1	1220
		Total 18,000

*Self-Sealing except for 3 cells in forward main tank

Grade . . . JP-4
 Specification . . . MIL-F-5624A

OIL

Wing Panel . . . 6 . . . (tot) 56.4
 Grade . . . 1005
 Specification . . . MIL-L-6081A
 WATER/ALCOHOL
 Wg, inbd . . . 6 . . . 600

BOMBS

See Listings on Page 6, note c

GUNS

Nr.	Type	Size	Rds ea	Loc.
2	M24A1	20mm	350	Fus, tail

CAMERAS

Vertical Station		
Nr.	Type	Lens
1	K-38	36"
One of the following may be substituted		
1	K-37	12"
1	K-38	24"
1	K17C - 24"	12", 6"
1	K-22A-24"	12", 6"

Camera station is located in the lower aft portion of the fuselage aft of the bomb bay.

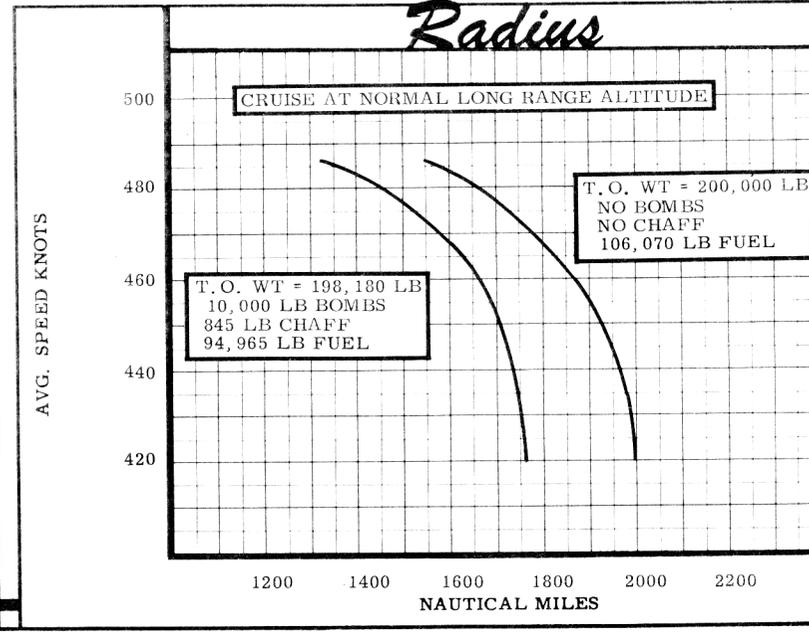
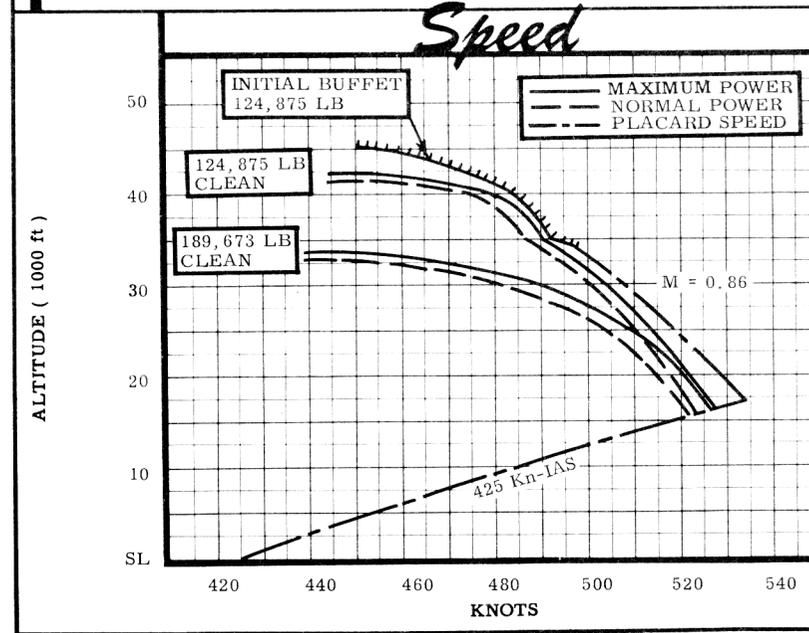
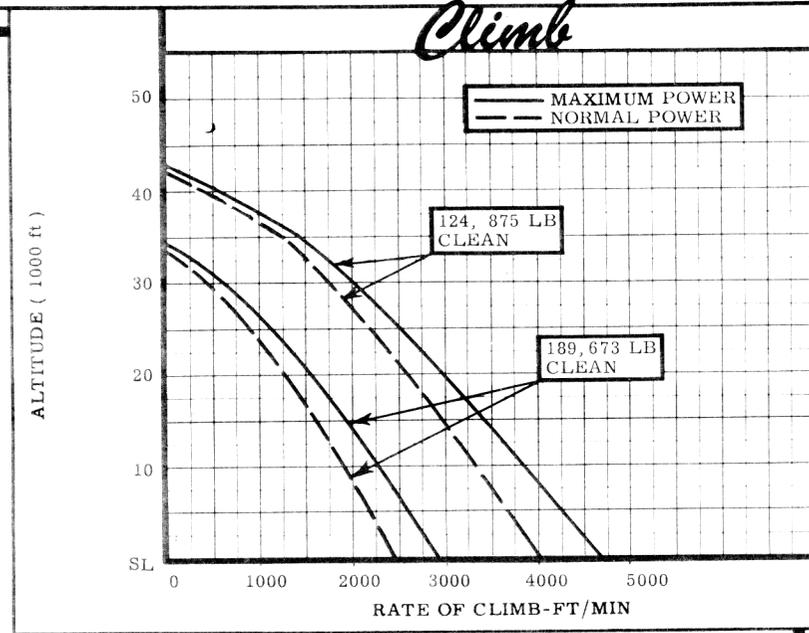
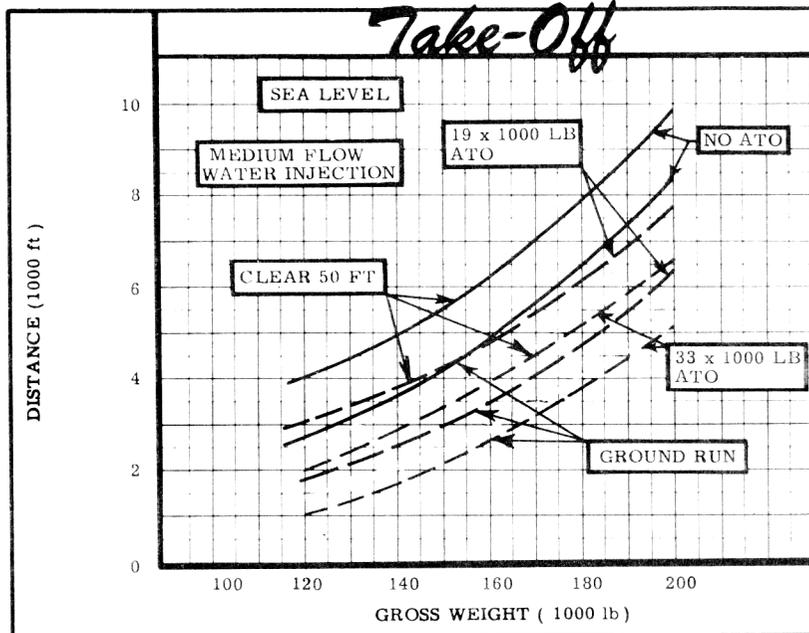
ELECTRONICS

VHF Command . . . AN/ARC-27
 Omni-Direc, Rec'vr . . . AN/ARN-14
 Bombing-Nav, Radar . . . *MA-7A
 Fire Control System . . . A-5 or MD-4
 Rendezvous Equip . . . *AN/APN-69
 Interphone . . . AN/AIC-10
 IFF . . . *AN/APX-6
 Glide Path Rec'vr . . . AN/ARN-18
 Radio Compass . . . AN/ARN-6
 ECM . . . *AN/ALT. 6
 Marker Beacon . . . AN/ARN-12
 Emergency Keyer . . . AN/ARA-26
 Chaff Dispenser . . . AN/ALE-1
 HF Liaison . . . *AN/ARC-21
 Warning Radar . . . AN/APS-54
 D/F Group . . . AN/ARA-25
 Gun Laying Radar . . . AN/APG-32
 *See note (f) page 6

Loading and Performance—Typical Mission

C O N D I T I O N S	BASIC MISSION	CRUISE CEILING	FERRY RANGE
	I	II	III
TAKE-OFF WEIGHT (5) (lb)	198,180	198,180	200,000
Fuel at 6.5 lb/gal (grade JP-4) (lb)	94,965	94,965	106,070
Payload (Bombs) (lb)	10,000	10,000	—
Payload (Chaff) (lb)	845	845	—
Wing loading (6) (lb/sq ft)	132.8	132.8	134.0
Stall speed (power off) (8) (kn)	152.3	152.3	152.9
Take-off ground run at SL (7) (1) (ft)	7900	7900	8100
Take-off ground run with ATO (6) (1) (ft)	6200	6200	6400
Take-off to clear 50 ft (7) (1) (ft)	9400	9400	9600
Take-off to clear 50 ft with ATO (6) (1) (ft)	7600	7600	7800
Rate of climb at SL (8) (3) (fpm)	2430	2430	2100
Rate of climb at SL(one engine out) (8) (2) (fpm)	2170	2170	1750
Time: SL to 20,000 ft (3) (min)	10.5	10.5	11.6
Time: SL to 30,000 ft (3) (min)	20.7	20.7	25.8
Service ceiling (100 fpm) (8) (3) (ft)	33,100	33,100	31,400
Service ceiling (one engine out) (8) (2) (ft)	30,400	30,400	28,800
COMBAT RANGE (4) (n mi)	—	—	4035
COMBAT RADIUS (4) (n mi)	1749	1507	—
Average cruise speed (kn)	433	467	433
Initial cruising altitude (ft)	29,900	33,350	30,100
Target speed (kn)	466	467	—
Target altitude (ft)	38,550	38,500	—
Final cruising altitude (ft)	43,800	47,000	43,700
Total mission time (hr)	8.1	6.6	9.4
COMBAT WEIGHT (lb)	124,875	125,295	93,156
Combat altitude (ft)	38,550	38,500	43,700
Combat speed (2) (kn)	484	484	487
Combat climb (2) (fpm)	870	870	1050
Combat ceiling (500 fpm) (2) (ft)	40,500	40,450	46,500
Service ceiling (100 fpm) (3) (ft)	41,800	41,750	47,900
Service ceiling (one engine out) (2) (ft)	40,000	39,950	46,100
Max rate of climb at SL (2) (fpm)	4660	4650	6150
Max speed at optimum altitude (2) (kn/ft)	527/16,300	527/16,300	528/16,400
Basic speed at 35,000 ft (2) (kn)	491	491	496
LANDING WEIGHT (lb)	92,600	92,600	93,156
Ground roll at SL (ft)	4500	4500	4500
Ground roll (auxiliary brake) (10) (ft)	2600	2600	2600
Total from 50 ft (ft)	5500	5500	5500
Total from 50 ft (auxiliary brake) (10) (ft)	3600	3600	3600

<p>N O T E S</p>	<p>(1) Take-off power (2) Maximum power (3) Normal power (4) Detailed descriptions of RADIUS and RANGE missions given on page 6. (5) Includes 3207 lb ATO and 5300 lb water-alcohol. (6) 19 bottles ATO, medium flow water injection. (7) No ATO, medium flow water injection (8) Values quoted are for take-off weight less ATO and water-alcohol. (9) Placard speed (10) Brake chute deployed at touch-down</p>	<p>PERFORMANCE BASIS: (a) Data source: Flight Test (b) Performance is based on powers shown on page 6.</p>
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N O T E S

FORMULA: RADIUS MISSION I

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speeds and altitudes. No external tanks are used for this mission. Climb to cruise ceiling and conduct a 15 minute level-flight bomb run at normal power. Drop bomb load and chaff and conduct 2 minutes evasive action and 8 minutes escape at normal power. Return to base at long range speeds and altitudes. Range-free allowances are fuel for 5 minutes at normal power at sea level for take-off allowances, 2 minutes at normal power at combat altitude for evasive action, and 30 minutes at maximum endurance airspeeds at sea level plus 5% of the initial fuel load for landing reserve.

FORMULA: RADIUS MISSION II

Take-off and climb on course to cruise ceiling at military power. Cruise out at the cruise ceiling at normal power. No external tanks are used for this mission. Conduct a 15 minute level-flight bomb run, drop bomb load and chaff, and conduct 2 minutes evasive action at normal power. Climb back to cruise ceiling at military power and cruise back to base at the cruise ceiling at normal power. Range-free allowances are as stated for Radius Mission I.

FORMULA: RADIUS MISSION III

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speeds and altitudes, dropping external tanks when empty. Land at remote base with only reserve fuel remaining. Range-free allowances are fuel for 5 minutes at normal power at sea level for take-off allowance and fuel for 30 minutes at maximum endurance airspeeds at sea level plus 5% of the initial fuel load for landing reserve.

GENERAL DATA:

(a) Thrust values shown on page 3 are engine manufacturer's guaranteed ratings. Thrust values used in performance calculations are as follows:

(6) J-47-GE-25 & -25A			
S. L. STATIC	LB	RPM	MIN
T. O.	7200*	7950	5
Max	5640	7800	30
Nor	5270	7630	Cont

* Medium flow water injection

(b) For detail planning refer to Technical Order 1B-47E-1 and latest applicable technical orders.

(c) The following loadings reflect the capabilities of the B-47E-II airplane utilizing general purpose bombs:

REVISION BASIS:

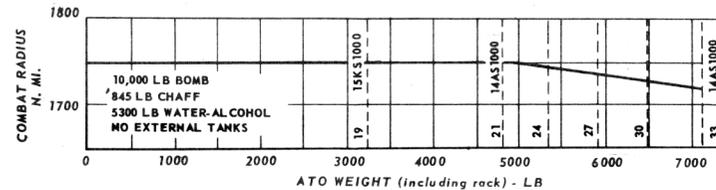
To reflect current characteristics and performance data.

SHORT BOMB BAY Hi-Density Kit		SHORT BOMB BAY Lo-Density Kit	
No. Class (lb)		No. Class (lb)	
WW II (Box Fin)		WW II (Box Fin)	
Not Carried		Not Carried	
INTERIM (Conical Fin)		INTERIM (Conical Fin)	
3 2000		3 2000	
6 1000		4 1000	
13 500 (T-127)		4 500 (T-127)	
14 500 (M-123)		8 500 (M-123)	
NEW SERIES		NEW SERIES	
6750 Chem. Cluster		4750 Chem. Cluster	
7750		4750	

- The Short Bomb Bay Hi-Density Kits are adaptable on all aircraft.
- The Short Bomb Bay Lo-Density Kit can be utilized only in airplanes 617 thru 730; airplanes 1 thru 616 have provisions for this kit but must be modified to accept it.

(d) The displacement rack & gear must be utilized in carrying (19) 15KS1000 bottles or the (30) 16NS1000 M-15 ATO manufactured by Phillips Petroleum.

(e) When carrying the Basic Mission payload (10,845 lb), full internal fuel load, and 5300 lb water-alcohol the 200,000 lb maximum taxi gross weight will be reached when the ATO weight is 5027 lb. For greater ATO loads it will be necessary to off-load fuel. This will decrease the radius performance as shown below:



- (f) Various combinations of
- TACAN AN/ARN-21
 - Rendezvous Equip. AN/ARN-76
 - ECM ALT-7, ALT-8 & QRC-49
 - HF Liaison AN/ARC-21 or AN/ARC-65
 - IFF APX-6A and APX-76

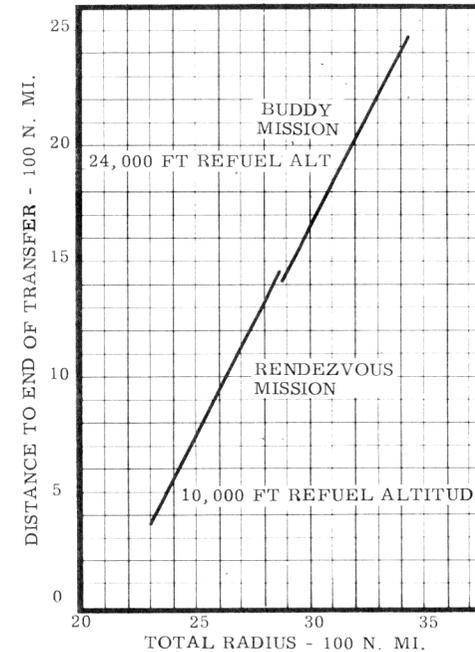
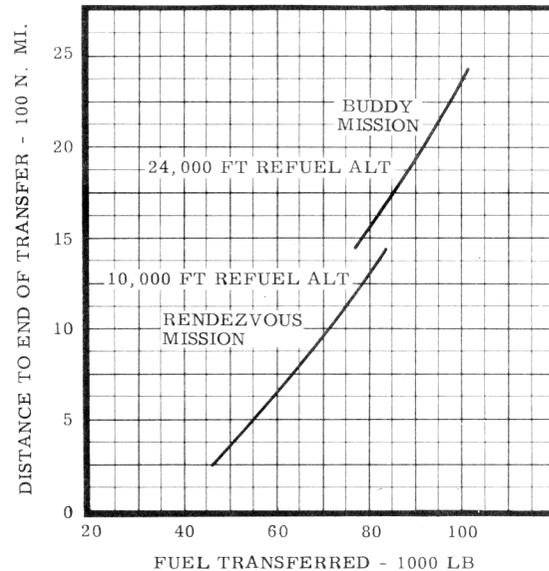
PERFORMANCE REFERENCE:

Boeing Report WD-13365, dated 10 June 1955 and WD-13360, dated 16 January 1956.

SUPPLEMENTAL

The curves below present the radius performance of the B-47E-II airplane utilizing air refueling. The graph on the left presents

the fuel transfer requirements while the graph on the right shows the total mission radius as a function of the distance out to end of transfer.



FORMULA: RENDEZVOUS MISSION

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speeds and altitudes. Descend to 10,000 ft (no credit for distance or fuel consumed in descent). Rendezvous at maximum endurance airspeed for 30 minutes. Transfer fuel on course at 600 gpm at a true airspeed of 280 knots. After transfer climb on course to optimum cruise altitude at normal power. Remainder of mission is conducted to Basic Mission rules. External tanks are dropped when empty. Range-free allowances are as for Basic Mission except that landing allowance of 5% and 30 minutes max endurance is based on fuel load immediately after refuel and 5% of initial fuel load plus 30 minutes max endurance fuel flow at refuel altitudes for rendezvous.

FORMULA: BUDDY MISSION

Take-off and climb on course to optimum cruise altitude at normal power. Rendezvous for 10 minutes at maximum endurance airspeed. Cruise out

with the tanker at long range speeds and altitudes. Descend to 24,000 feet altitude; transfer fuel on course at 900 gpm at a true airspeed of 340 knots. After transfer, climb on course to optimum cruise altitude. Remainder of mission is conducted to Basic Mission rules. External tanks are dropped when empty. Range-free allowances are as for the Basic Mission except that a 10 minute rendezvous is included and landing reserve is fuel for 30 minutes at maximum endurance airspeed at sea level plus 5% of the fuel load at the end of air refueling.

NOTE:

- Take-off weight is 200,000 lb.
- ATO load is 3207 lb (19) 15KS1000 bottles
- Water-alcohol load is 5300 lb.
- Refueled to capacity (213,268 lb) with external tanks.
- Bomb load is 10,000 lb; chaff load is 845 lb.